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Sleep 101: Importance, Effects & Steps To Maximize Its Anabolic Potential!



Training recovery is of the utmost importance and sleep is by far the most important training recovery factor. Learn more about what sleep is, why it's important, tips on how to maximize the anabolic potential of sleep and more right here!

Although resistance training is effective as a means to elicit meaningful and beneficial body composition changes—i.e. muscle growth and fat loss—resistance training is also extremely stressful. Training recovery, therefore, is of the utmost importance and sleep is by far the most important training recovery factor. It's a fact: you need rest to recover and grow.

Unfortunately, sleep is a rare commodity, and many bodybuilders don't get enough of it. Sometimes busy schedules get in the way, and other times sleep isn't made a priority. This is a mistake because neglecting sleep will bring your results to a grinding halt.

In this article we'll examine:

1. What Is Sleep?
2. The Importance Of Sleep
3. The Effects Of Sleep Deprivation
4. How To Maximize The Anabolic Potential Of Sleep

At the end of this article you'll know what sleep is, how it works, why it's important and how to best maximize the anabolic potential of sleep for greater muscle growth.

SLEEP 101

Your sleeping patterns are regulated by your biological clock that runs on a 24 hour clock, according to the daylight cycle.

In the morning hours, when light levels rise, your body increases the output of chemicals like adrenaline and dopamine while simultaneously decreasing sleep inducing chemicals. This allows you to awaken and to become alert.

ADRENALINE AND DOPAMINE

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Adrenaline is a hormone and neurotransmitter. It is a catecholamine, a sympathomimetic monoamine derived from the amino acids phenylalanine and tyrosine.

Dopamine is a neurotransmitter occurring in a wide variety of animals, including both vertebrates and invertebrates. In the brain, this phenethylamine functions as a neurotransmitter, activating the five types of dopamine receptors—D1, D2, D3, D4 and D5, and their variants.

In the evening hours, when light levels decrease, your body increases the output of chemicals like serotonin, melatonin and GABA while simultaneously decreasing alert inducing chemicals. This allows you to relax and prepare for sleep.

SEROTONIN, MELATONIN, AND GABA

Serotonin is a monoamine neurotransmitter synthesized in serotonergic neurons in the central nervous system (CNS) and enterochromaffin cells in the gastrointestinal tract.

Melatonin is a naturally occurring hormone. Circulating levels vary in a daily cycle, and melatonin is important in the regulation of the circadian rhythms of several biological functions.

Gamma-aminobutyric acid (GABA) is the chief inhibitory neurotransmitter in the mammalian central nervous system. It plays an important role in regulating neuronal excitability throughout the nervous system.

Sleeping is a series of events that are divided into five distinct stages:

STAGE 1

Stage 1 sleep is characterized by drowsiness, a slowing of brain activity and a closing of the eyes. This stage of sleep is the stage from which you're most easily disturbed.

STAGE 2

Stage 2 sleep is characterized by a further slowing of brain activity and increased muscle relaxation. In stage 2 sleep, the heart also slows and body temperature decreases. Also, the skeletal muscle system begins shutting down to prepare for deep sleep.

STAGES 3 & 4 SLEEP

Stages 3 and 4 sleep are characterized by further brain activity reductions, complete skeletal muscle paralysis, loss of environmental awareness and slowed metabolic function.

Stage 3 sleep transitions into stage 4 sleep—the deepest of all sleep states and the most difficult stage from which to awaken. Stage 4 sleep is the most beneficial sleep stage because growth hormone levels peak at this time.

REM SLEEP

REM Sleep—or Rapid Eye Movement Sleep—is sometimes called Stage 5 Sleep, and it's characterized by rapid back-and-forth eyeball movement and vivid dreams. In this stage of sleep, the heart beat increases, blood pressure rises and breathing becomes more rapid.

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Over the course of a night, we go in and out of the various sleep stages.

THE IMPORTANCE OF SLEEP: ANABOLISM AND MORE

Now that the science is over with, let's get to the good stuff: what sleep can do for your overall health and your muscle building.

Sleep dramatically impacts your entire body, and it's during sleep that your body recovers from exercise, repairs itself and grows new muscle tissue. Your body maximizes its output of growth hormone during sleep, and it is for this reason that sleep is anabolic.

At the same time, sleeping also replenishes critical neurotransmitters (specialized chemicals) that you need to bodybuild effectively and safely. These neurotransmitters include dopamine, adrenalin, noradrenalin, acetylcholine and more.

NEUROTRANSMITTERS

Neurotransmitters are chemicals that are used to relay, amplify and modulate signals between a neuron and another cell. Neurotransmitters are packaged into vesicles that cluster beneath the membrane on the presynaptic side of a synapse, and released into the synaptic cleft, where they bind to receptors located in the membrane on the postsynaptic side of the synapse.

These chemicals are responsible for focus, attention, motivation, overall energy levels and muscular contractions. These chemicals are depleted by hard training and everyday activities. Only sleeping allows your body to repair itself and replenish the chemicals that are needed for you to get best results.

At the same time, sleeping is important for your immune system, for your mental health and for the millions of biochemical processes that occur in your body every day. If you don't get enough sleep your body will not function optimally, your health will decline, and your results will suffer.

CONSEQUENCES OF SLEEP DEPRIVATION

Sleep deprivation—not getting enough sleep—is the single best way to destroy your health and to cause muscle wasting. Sleep deprivation has been linked to many health problems including depression, reduced immunity to diseases and heart problems.

When it comes to building muscle, sleep deprivation is especially destructive because depriving our body of the sleep that it needs reduces the amount of recovery time provided for repair and growth.

As a result, failing to get enough sleep can trigger rises in system-wide inflammation, increases in cortisol levels, catabolism onset, muscle wasting and an increase in body fat. At the same time, failing to get enough sleep will reduce anabolic hormone levels and disrupt the normal functioning of your body.

The fact is: sleep deprivation magnifies the stressful impact of exercise upon your body and puts you at risk for overtraining. But there is another consequence of sleep deprivation: increased risk of injury.

Failed to get enough sleep will dramatically affect your attention span and your ability to pay attention in the gym. And, a reduced attention span will put you at risk for injuries because you will be less likely to pay attention to strict form and, you will be more likely to get injured because of carelessness—i.e. dropping weights, etc.

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MAXIMIZE THE ANABOLIC POTENTIAL OF SLEEP

Maximizing the anabolic potential of sleep is best accomplished by:

1. Manipulating your sleep environment;
2. Using effective supplements

When attempting to maximize the anabolic potential of sleep, the goal is to maximize the quality and quantity of sleep—in that order.

Sleep quality is more important than sleep quantity—as anyone who has suffered from broken sleep can attest. You must sleep deeply to maximize the anabolic potential of sleep.

ENVIRONMENT

Your sleeping environment has a great impact on your ability to fall asleep and to stay asleep. It's not easy for many people to fall asleep because we are surrounded by more lights and more noise than in times past.

While it is almost impossible to fall asleep in a perfectly quiet and perfectly dark environment, it is important to try to achieve as close to this ideal situation as possible.

As already discussed, the sleeping cycle operates according to the daylight cycle. In the mornings when light levels increase, you awaken. In the evenings when daylight levels decrease, you begin to relax. This is due, primarily to the chemical melatonin.

Scientific research shows that melatonin facilitates sleep onset, and that light suppresses melatonin secretion in humans.

In other words: if the light levels in your sleep environment are too high, your sleep hormone levels will be suppressed—making it more difficult to fall asleep.

Sound—noise—also affects your ability to fall and stay asleep, because even though you may fall asleep, your brain can still process sound while you are sleeping, possibly waking you up in the middle of the night in your deepest and most anabolic sleep stage.

Therefore, do your best to eliminate light and noise from your immediate sleep environment. Doing so will help you fall asleep faster, and stay asleep until morning.

SUPPLEMENTATION

Supplementation plays a huge role in maximizing the anabolic potential of sleep. Some supplements help you to fall asleep more easily, and others maximize the anabolic potential of sleep while you are sleeping.

GETTING-TO-SLEEP SUPPLEMENTS

ZMA: ZMA is a supplement made from zinc, magnesium and vitamin B6. While this supplement can boost testosterone levels if you're zinc deficient, its real value is in that it induces sleep and produces vivid dreams. It also helps you stay asleep so you awaken refreshed.

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Melatonin: Melatonin is a chemical that's secreted from your pineal gland and it helps you relax and sleep. The pineal gland is a small endocrine gland in the vertebrate brain. It produces melatonin, a hormone that affects the modulation of wake/sleep patterns and photoperiodic (seasonal) functions. Supplemental melatonin works very quickly and research shows that melatonin is effective at supporting normal sleep patterns.

GABA: GABA—Gamma-Amino Butyric Acid—is a special brain chemical that rises prior to sleeping. GABA is important because it not only facilitates sleep onset, but it also stimulates growth hormone secretions during stage 4 sleep.

SUPPLEMENTS TO MAXIMIZE THE ANABOLIC POTENTIAL OF SLEEP

Here are some of the best supplements to maximize the anabolic potential of sleep:

- **Glutamine:** Glutamine is an amino acid that prevents catabolism and supports a strong immune system.
- **BCAAs:** BCAAs— or Branched Chain Amino Acids— BCAAs can also help to prevent catabolism and promote maximum anabolism.
- **Protein Powder Blends:** Protein Powder Blends are especially beneficial taken prior to sleep because multiple protein types release amino acids at different rates, providing excellent amino acid coverage throughout the night and preventing catabolism resulting from amino acid shortage. Protein powder blends help ensure a positive nitrogen balance and help spare muscle tissue from wasting.
- **Specialized Enzymes:** Specialized Enzymes are a new and long overdue supplementation trend. A protease is any enzyme that conducts proteolysis, that is, begins protein catabolism by hydrolysis of the peptide bonds that link amino acids together in the polypeptide chain. Sitosterol is one of several phytosterols with chemical structures similar to that of cholesterol. It is white in color and waxy in nature.

PRE-SLEEP TIPS

Your pre-sleep behaviors dramatically affect your ability to fall and stay asleep. Follow these pre-sleep tips to help maximize the anabolic potential of sleep:

1. Establish a regular sleeping pattern by going to bed at the same time.
2. Reduce your physical activity two hours prior to sleeping.
3. Avoid alcohol and/or coffee for several hours before going to bed.
4. Skip large meals before bed.

FINAL THOUGHTS

Sleep is vitally important for muscle growth. The sleeping period is the most important period of recovery and muscle growth and can, potentially, be the most anabolic period of the day. But the catch is this: sleep can also be highly catabolic.

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Maximizing the anabolic potential of sleep is best achieved by manipulating the sleep environment and using time-tested supplements that act to support normal healthy sleep and maximize anabolic conditions during this time of rest and recovery.